

Serial No. 09/632,266

REMARKS

Claims 1-14, as amended, remain herein.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version with Markings to Show Changes Made".

1. Objections were stated to the drawings for allegedly not illustrating all elements of a claim, and specifically not illustrating the limitations of claims 1 and 14. Submitted herewith is a Request for Approval of New Drawing accompanied by a copy of Figure 7, showing a diagram of a circuit breaker comprising a trip device according to the embodiment of the invention shown in Figure 2. Approval of the proposed drawing and withdrawal of the objection to the drawings are respectfully requested.

Serial No. 09/632,266

2. The original Abstract has been replaced with a substitute Abstract on the attached page.

3. Claims 4 and 9 were rejected under 35 U.S.C. §112, second paragraph. Claim 1 has been amended to recite "setting parameters, each having a value," thereby providing antecedent basis for "value" in claim 4. Claim 9 has been reworded in the form of a method claim describing operation of the presently claimed invention. The term "setting parameters" has been replaced with "setting-parameters". Both "setting-parameters" and "curve" are recited as workpiece elements acted on by the steps of the method.

Reconsideration and withdrawal of this rejection are respectfully requested.

Serial No. 09/632,266

4. Claims 1, 2, 7-9 and 12-14 were rejected under 35 U.S.C. §103(a) over Fig. 1 showing Applicants' Admitted Prior Art (AAPA) and Eckart et al. U.S. Patent 4,245,318.

The presently claimed electronic trip device comprises a man-machine interface connected to a processing unit for supplying setting-parameters, each having a representative value, the setting-parameters for modifying during a setting operation a visual aspect of at least one portion of a curve representative of a parameter whose setting is being adjusted. This arrangement is nowhere disclosed or suggested in either of the cited references.

The Office Action cites Applicants' Admitted Prior Art described in the specification, (AAPA), Fig. 1, as allegedly disclosing a processing unit for supplying setting-parameters to a man-machine interface. However, the Office Action admits that the AAPA does not disclose a means for displaying the setting-parameters in a man-machine interface for modifying a visual aspect of at least one portion of a curve representative of a

parameter whose setting is being adjusted. Also, the AAPA does not disclose such modifying a visual aspect of the curve during a setting operation, as recited by applicants' claim 1. In other words, AAPA does not describe a real-time change in the visual display of a curve representing parameters of an actual circuit in which the trip device operates, as the setting-parameter is being changed.

The Office Action also cites Eckart '318, Figs. 2-5, as allegedly teaching changing the visual aspect of a curve to vary the shape and position of the displayed trip-time curve. However, Eckart '318, column 4, lines 40-43, describes the display being activated from a simulation program. A change in a parameter in the Eckart '318 device does not cause a change in the trip device parameters nor a change in the visual appearance of a curve representing such trip device parameters, because the device is in a simulation mode and is not an active trip-component of the circuit. Accordingly, Eckart '318 does not teach, in a device receiving electrical signals and outputting

signals to a tripping relay, setting parameters for modifying a visual aspect of at least one portion of a parameter curve during a setting operation, as recited in applicants' claim 1.

Such real-time, i.e., in-circuit, visual display of changing visual appearance of adjusted parameter curves is unique to the presently claimed invention, for the following reasons. The Office Action admits that the AAPA does not disclose such a display. And, there is no teaching or suggestion in Eckart '318 that a system that receives and outputs signals to a tripping relay, i.e., actually functioning in the tripping relay circuit, would benefit from showing changing parameter-curve graphics during the parameter setting operation.

The application in Eckart '318 of graphics associated with simulated parameter settings is limited to that alone. Eckart '318 does not teach or suggest any benefits or desirability of actively changing parameter graphics during an actual parameter-setting step of a functioning circuit. With no teaching or suggestion from Eckart '318, one skilled in the art would not

Serial No. 09/632,266

seek to modify the AAPA arrangement. The only teaching in the present record that an in-circuit system displaying a graphic response to parameter changes during a setting operation is found in applicants' disclosure and claims. For the foregoing reasons, neither the AAPA nor Eckart '318 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references which would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2, 7-9 and 12-14, which depend from claim 1, are allowable for the same reasons as claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

5. Claims 3, 5, 6, 10 and 11 were rejected under 35 U.S.C. §103(a) over the AAPA, Fig 1, Eckart '318 and King et al. U.S. Patent 5,675,754.

Serial No. 09/632,266

Claims 3, 5, 6, 10 and 11, which depend from claim 1, are allowable for the same reasons as claim 1 as demonstrated above herein.

Moreover, King '754, cited for a keypad coupled with a processor for providing a menu style display, does not fill the deficiencies of the AAPA, Fig. 1 and Eckart '318 as demonstrated herein.

For the foregoing reasons, none of the AAPA, Eckart '318, nor King '754 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in any of these references which would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 3, 5, 6, 10 and 11, which depend from claim 1, are allowable for the same reasons as claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Serial No. 09/632,266

All claims 1-14 are now proper in form and patentably distinguished over all grounds of rejection cited in the Office Action. Accordingly, allowance of all claims 1-14 is respectfully requested.

Serial No. 09/632,266

Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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November 21, 2002

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RWP:RNW/mhs:ch:dlb

Attachments: Version with Markings  
To Show Changes Made  
Substitute Abstract

Attorney Docket No.: MGRN:376

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Version with Markings to Show Changes Made

## CLAIMS

1. (Amended) An electronic trip device comprising:

—a processing unit having inputs ~~to receive~~ for receiving electrical signals representative of electrical quantities and an output ~~to supply~~ for supplying a tripping signal to a tripping relay, and

—a man-machine interface connected to the processing unit ~~to supply~~ for supplying setting parameters, each having a respective value, and ~~to display~~ for displaying information and tripping curves on a screen, said setting parameters for modifying during a setting operation a visual aspect of at least one portion of a curve representative of a parameter whose setting is being adjusted, wherein

\_\_\_\_\_ said man-machine interface comprises means for displaying setting parameters which modify the visual aspect of at least one portion of curve representative of a parameter whose setting is being adjusted.

2. (Amended) The trip device according to claim 1, wherein the means for displaying setting parameters ~~modify~~ is for modifying the visual aspect of at least one portion of curve by increasing the thickness of said at least one portion of curve representative of a parameter whose setting is being adjusted.

3. (Amended) The trip device according to claim 1, wherein the means for displaying setting parameters ~~frame~~ is for highlighting at least one item of information displayed on the screen representative of a parameter whose setting is being adjusted.

4. (Amended) The trip device according to claim 1, wherein the means for displaying setting parameters ~~change~~ is for changing at least a color of text or background of at least one item of



Version with Markings to Show Changes Made

information displayed on the screen representative of a parameter whose value is being modified.

5. (Amended) The trip device according to claim 1, wherein the man-machine interface comprises display means for displaying a scrollable menu ~~to frame~~ for framing at least one item of information to be selected in a selection phase.
6. (Amended) The trip device according to claim 5, wherein the display means ~~frame is for~~ highlighting in a scrollable menu one item of information in ~~the~~a top-most position, one item of information in ~~the~~a bottom-most position, and items of information ~~scrolled in a frame in~~ in a fixed ~~in respective~~ intermediate position between a top-most position ~~positions~~ and a bottom-most position.
7. (Amended) The trip device according to claim 1, wherein the man-machine interface comprises selection means comprising function buttons associated ~~to~~ with indicator lights to indicate a function selected by a button.
8. (Amended) The trip device according to claim 7, wherein the function buttons comprise at least a first button ~~to select~~ for selecting a measurement function, at least a second button ~~to select~~ for selecting a maintenance function, and a third button ~~to select~~ for selecting a setting function.
9. The trip device according to claim 7, the parameters whereof are set according to a process A process for setting parameters of a trip device comprising:
  - a step involving pressing on activating a setting function selection button,
  - a step involving display of displaying a list of protection curves,

Version with Markings to Show Changes Made

15

—a step involving pressing on activating at least one shift button in a scrollable menu,

—a step involving pressing on activating a validate button to select a curve whose parameters are to be set,

—a step involving display of displaying a selected curve and of corresponding setting parameters,

—a step involving display of displaying a selected portion of the selected curve with broader thickness and of a corresponding parameter with a frame,

—a step involving pressing on activating at least one shift button to change the portion of a curve and the a corresponding parameter,

—a step involving pressing on activating a validate button to switch to a parameter value modification mode,

—a step involving pressing on activating a shift button to change parameter values, and

—a step involving pressing on activating at least one validate button to quit a modification mode.

10. The trip device according to claim 1, wherein the man-machine interface is connected by communication means to the processing unit.
11. (Amended) The trip device according to claim 10, wherein the communication means is for communicating according to an Internet type protocol.
12. (Amended) The trip device according to claim 1, wherein the man-machine interface is represented on a screen ~~to display for displaying~~ information and tripping curves and ~~to determine for determining~~ setting parameters.

Version with Markings to Show Changes Made

13. The trip device according to claim 12, wherein setting parameters are determined by soft keys represented on a screen of the man-machine interface.

14. (Amended) A trip device according to claim 1, in combination with a circuit breaker comprising main contacts connected in series with power conductors, current sensors arranged located on said conductors, and a tripping relay for receiving a tripping signal to bring about opening of said contacts, ~~comprising a~~ wherein the trip device according to claim 1 is connected to said current sensors and to said tripping relay.

## ABSTRACT

**TRIP DEVICE COMPRISING AN IMPROVED MAN-MACHINE INTERFACE AND  
CIRCUIT BREAKER COMPRISING SUCH A TRIP DEVICE**

The electronic trip device ~~comprises~~ includes a processing unit having inputs to receive electrical signals representative of electrical quantities and an output to supply a tripping signal to a tripping relay, and a man-machine interface connected to the processing unit to supply setting parameters and to display information and tripping curves on a screen. The man-machine interface ~~comprises~~ includes display means for displaying setting parameters which modify the visual aspect of at least one portion of curve representative of a parameter whose setting is being adjusted. The circuit breaker ~~comprises~~ includes such a trip device connected to current sensors and to contacts to interrupt currents in electrical conductors.